

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A process for the preparation of an electrochemical device composed of a polyether/lithium salt electrolyte film between two films respectively constituting the positive electrode and the negative electrode, wherein the process comprises assembling a multilayer structure comprising a current-collecting support, a film intended to form the positive electrode, a polyether film intended to form the electrolyte and a film intended to form the negative electrode, wherein:

- the film intended to form the positive electrode and/or the film intended to form the negative electrode are composed of a composite material comprising the lithium salt;
- the polyether film intended to form the electrolyte is prepared by extrusion and does not comprise lithium salt;
- the assembled device is left at rest for a time sufficient to allow the lithium salt present in the material of the positive electrode and/or in the material of the negative electrode to diffuse into the polymer film.

2. ((Previously Presented)) The process as claimed in claim 1, wherein the films respectively constituting the negative electrode, the positive electrode and the electrolyte have thicknesses of between 10 μm and 150 μm .

3. (Previously Presented) The process as claimed in claim 1, wherein the polyether is chosen from the copolymers which are obtained from ethylene oxide and from at least one substituted oxirane and which comprise at least 70% of -CH₂-CH₂O- repeat units derived from ethylene oxide.

4. (Previously Presented) The process as claimed in claim 3, wherein the polyether comprises $-\text{O}-\text{CH}_2-\text{CHR}-$ units, derived from an oxirane $\text{CH}_2-\text{CHR}-\text{O}$, in which R is an alkyl radical.

5. (Previously Presented) The process as claimed in claim 4, wherein R is an alkyl radical having from 1 to 16 carbon atoms.

6. (Previously Presented) The process as claimed in claim 3, wherein the polyether comprises $-\text{O}-\text{CH}_2\text{CHR}'-$ units, derived from an oxirane $\text{CH}_2-\text{CHR}'-\text{O}$ in which R' is a group capable of polymerizing by the radical route.

7. (Previously Presented) The process as claimed in claim 6, wherein said group capable of polymerizing by the radical route is selected from the group consisting of a vinyl, allyl, vinylbenzyl and acryloyl group.

8. (Previously Presented) The process as claimed in claim 3, wherein the polyether comprises repeat units derived from several substituted oxiranes.

9. (Previously Presented) The process as claimed in claim 1, wherein the composite material of the film intended to form the positive electrode comprises an active material, a binder, a material conferring electronic conductivity and the lithium salt.

10. (Previously Presented) The process as claimed in claim 9, wherein the positive electrode active material is selected from the group consisting of $\text{Li}_{1+x}\text{V}_3\text{O}_8$, $0 < x < 4$, $\text{Li}_x\text{V}_2\text{O}_5 \cdot n\text{H}_2\text{O}$, $0 < x < 3$, $0 < n < 2$, LiFePO_4 , hydrated or anhydrous iron phosphates and sulfates, hydrated or anhydrous vanadyl phosphates and sulfates, LiMn_2O_4 , the compounds derived from LiMn_2O_4 obtained by partial substitution of Mn by Al, Ni and/or Co, LiMnO_2 , the compounds derived from LiMnO_2 obtained by partial substitution of Mn by Al, Ni and/or Co, LiCoO_2 , the compounds derived from LiCoO_2 obtained by partial substitution of Li by Al, Ti, Mg, Ni and/or Mn, LiNiO_2 and the compounds derived from LiNiO_2 obtained by partial substitution of Ni by Al, Ti, Mg and/or Mn.

11. (Previously Presented) The process as claimed in claim 1, wherein the film constituting the negative electrode is a lithium film.

12. (Previously Presented) The process as claimed in claim 1, wherein the film intended to form the negative electrode is composed of a composite material which comprises an active material, a binder, a material conferring electronic conductivity and the lithium salt.

13. (Previously Presented) The process as claimed in claim 12, wherein the active material is selected from the group consisting of:

- carbon compounds,
- alloys with lithium of Li_xM type ($M=Sn, Sb, Si$) (obtained from SnO , from SnO_2 , from Sn , $Sn-Fe(-C)$ compounds, from Si compounds, from Sb compounds), and
- $Li_xCu_6Sn_5$ ($0 < x < 13$) compounds, iron borates, pnictides, simple oxides possessing reversible decomposition and insertion oxides, such as titanates, MoO_3 or WO_3 .

14. (Previously Presented) The process as claimed in claim 1, wherein the lithium salt is selected from the group consisting of $LiPF_6$, $LiAsF_6$, $LiClO_4$, $LiBF_4$, LiC_4BO_8 , $Li(C_2F_5SO_2)_2N$, $Li[(C_2F_5)_3PF_3]$, $LiCF_3SO_3$, $LiCH_3SO_3$ and $LiN(SO_2CF_3)_2$.

15. (Previously Presented) The process as claimed in claim 9, wherein the binder is composed either of a nonsolvating polymer and at least one polar aprotic compound, or of a solvating polymer.

16. (Previously Presented) The process as claimed in claim 15, wherein the polar aprotic compound is selected from the group consisting of linear or cyclic carbonates, linear or cyclic ethers, linear or cyclic esters, linear or cyclic sulfones, sulfamides and nitriles.

17. (Currently Amended) The process as claimed in claim 15, wherein the nonsolvating polymer is selected from the group consisting of:

- vinylidene fluoride homopolymers and copolymers,
- copolymers of ethylene, of propylene and of a diene,
- tetrafluoroethylene homopolymers and copolymers,
- N-vinylpyrrolidone homopolymers and copolymers,
- acrylonitrile homopolymers and copolymers, and
- methacrylonitrile homopolymers and copolymers.

18. (Previously Presented) The process as claimed in claim 15, wherein the nonsolvating polymer carries ionic functional groups.

19. (Previously Presented) The process as claimed in claim 15, wherein the binder is a solvating polymer selected from the group consisting of polyethers of linear, comb or block structure, forming or not forming a network, based on poly(ethylene oxide); copolymers comprising the ethylene oxide or propylene oxide or allyl glycidyl ether unit; polyphosphazenes; crosslinked networks based on polyethylene glycol crosslinked by isocyanates; copolymers of oxyethylene and of epichlorohydrin; and networks obtained by polycondensation which carry groups which make possible the incorporation of crosslinkable groups.

20. (Previously Presented) The process as claimed in claim 9, wherein the compound conferring electronic conduction properties is preferably a carbon black which does not catalyze the oxidation of the electrolyte at high potential.

21. (Previously Presented) The process as claimed in claim 9, wherein the composite material additionally comprises a nonvolatile liquid organic solvent.

22. (Currently Amended) The process as claimed in claim 21, wherein said liquid solvent is selected from the group consisting of:

- polar aprotic compounds, such as linear or cyclic carbonates, linear or cyclic ethers, linear or cyclic esters, linear or cyclic sulfones, sulfamides and nitriles,
- phthalates, such as dioctyl phthalate, dibutyl phthalate and dimethyl phthalate, and

- a polyethylene glycol or poly(ethylene glycol) dimethyl ether of low mass.

23. (Previously Presented) The process as claimed in claim 1, wherein the polyether of the film intended to form the electrolyte is a copolymer comprising crosslinkable units and in that at least one of the electrodes is composed of a composite material which additionally comprises a crosslinking agent for said polyether.